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ABSTRACT

The value of linking manpower analyses and educational policy formation is illustrated by the experience of the New Jersey Department of Higher Education in planning programs for professional nurses. After reviewing the history of manpower planning for nurses in New Jersey, the results of a 1980 nursing study and projections of the future need for registered nurses in New Jersey are examined. Among the areas addressed by the 1980 study are the following: the present supply and distribution of registered nurses in New Jersey by employment sector, geographic location, educational preparation, and age; and specific settings in which there is a nursing personnel shortage and contributing factors. Findings include the following: A total shortage of approximately 2,300 full-time equivalent nurses was identified as of January 1980 (primarily in acute and long-term care facilities and for specific shifts and specialty services); although the largest number of hospital nurses are graduates of the traditional hospital-based diploma schools, this percentage has been declining in recent years and the number of associate degree nurses in hospitals has been increasing; and total enrollments in nursing education programs in New Jersey declined by 6 percent between 1977 and 1979. In addition to projecting the demand for the total number of registered nurses through 1990, projections were developed for the distribution of nurses by educational degree and employment sector. Recommendations developed by the Department of Higher Education based on the study findings are briefly considered, and summary tables on trends and projection methods of the other states in the nation are presented. (SW)

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An Analysis of the Need for Registered Nurses in New Jersey: A Case Study of the Uses of Manpower Planning in the Development of State Level Higher Education Policy

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Introduction

In seeking to achieve an appropriate balance between institutional rights of academic freedom and procedural autonomy on the one hand and a state government's right to participate in the rational development of a system of public higher education on the other, statewide coordinating agencies have assumed varying degrees of advisory and regulatory responsibility. Regardless of the specific roles and functions of the state higher education agencies however, they share a number of common goals, including:

1) The avoidance of wasteful duplication in programs;
2) The efficient use of scarce resources;
3) The orderly growth of all postsecondary facilities within the State system;
4) The collection of data needed for policy determination;
5) Fostering excellence in the development of programs; and
6) Service as a communications agency among the academic community, the State government and the public.(1)

To achieve these goals, the Carnegie Commission for Higher Education recommended that these agencies be assigned "certain program review responsibilities and authority consistent with their educational planning function."(2)

Program review encompasses such decisions as whether to establish new institutions or programs, as well as to reallocate or eliminate existing ones. Because of the frequently complex nature of these decisions, Berdahl recommends that all state higher education agencies have the power to approve new programs and to advise on the elimination of existing programs.(3) Criteria to be considered in making these determinations include state financial resources and manpower needs.

Formal manpower analyses address the question of the need for trained personnel in specific occupational categories, based upon a number of supply and demand considerations. These studies, in turn, serve to inform state level decisions with respect to the development of technical and professional programs, in terms of their type, number, size and location. This paper focuses on the uses of manpower needs assessments in the formulation of statewide higher education program policy. Specifically, the experience of the New Jersey Department of Higher Education in planning programs for professional nurses is presented as a case study of the potential for linkages between manpower analyses and educational policy.

The History of Manpower Planning for Nurses in New Jersey

For the past decade a separate division within the Department of Higher Education, devoted exclusively to health professions education issues, has undertaken extensive

(1) Carnegie Commission on Higher Education, The Capitol and the Campus: Statewide Responsibility for Postsecondary Education, April 1971, p. 26.
(2) Ibid, p. 29.
(3) Berdahl, Robert O., Statewide Coordination of Higher Education, American Council on Education, Washington, D.C., 1971, p. 246.

needs assessments in a number of health occupational categories.(4) This division was established in 1970 in recognition that health professions educational programs are uniquely specialized and far more costly to operate than other collegiate programs. Moreover, during the past decade, health professions education has accounted for an ever increasing proportion of the State's higher education budget as enrollments in these programs far outstripped growth in other postsecondary sectors.

The specific focus of this paper is professional nursing, because 1) registered nurses constitute the largest single professional group within the health field (with almost three times the active personnel of any other health occupational category); 2) the New Jersey Department of Higher Education provides financial support for all nursing education programs in the State; and 3) the Department has been updating, refining and expanding analyses of the need for nurses since the initial preparation of a statewide master plan for health professions education almost a decade ago. Thus, it is possible to follow the development of increasingly comprehensive analytic techniques for the study of manpower needs in a single occupation over an extended period of time.

The Health Professions Education Master Plan, published in 1973, was a comprehensive attempt to address such issues as program development and approval, accreditation, credentialing, development of new programs, and manpower requirements of a number of health professions in the State. It included information on the total supply of and projected demand for nurses drawn from a previous report by the State Department of Health. The data were extremely limited, however. No information was available on the distribution of nurses, enrollment figures were essentially based upon hand counts, and the demand estimates were adapted from a 1967 Report of the Surgeon General of the United States. In recognition of the paucity of data and with full commitment to a dynamic planning process, the Department immediately began a thorough examination of the technical aspects of health manpower planning. The result was the development of a system for the collection of computer - oriented uniform data sets on licensed health professionals in the State. Based on these data, a series of reports were published in 1975 on the supply and distribution of specific occupational categories.

(4) In contrast, local manpower needs assessments for the development of most other postsecondary educational programs are typically performed by the individual institutions and reviewed by the Department. This has proved to be an effective and efficient utilization of personnel resources. It is interesting to note however, that the Department is presently considering the adoption of a policy which would establish criteria for identifying fields in which to conduct extensive manpower analyses similar to those previously conducted in the health areas in anticipation of the establishment of regional or statewide educational programs.

The following year, a major policy paper related to the planning of nursing education programs was released. It presented a rigorous quantitative analysis of the current and projected need for nursing personnel in New Jersey. For the first time, State support of undergraduate nursing education programs could be reasonably tied to long-range projections of the need for professional nurses. Supply projections were based principally on the uniform licensure data system, as well as on annual nursing program enrollment figures collected through a formal inventory of all health professions educational programs in the State. Demand projections were based upon an econometric model developed by the Department, which related the distribution of nursing personnel by county (the dependent variable) to income, population, age, and hospital service utilization (the independent variables). This analysis determined that there would be a growing surplus of nursing personnel in New Jersey beginning in 1980 and growing significantly by 1985. Accordingly, the Board of Higher Education adopted a policy that no new nursing programs would be authorized and that existing programs would not be permitted to grow beyond 1977 enrollment levels. This policy was to continue in effect until 1980, at which time it was to be reexamined in light of new developments.

The 1980 Nursing Study

OVERVIEW - In responding to the 1977 mandate for an updated study of nursing needs in New Jersey, the Department of Higher Education expanded its data collection activities and analyses well beyond the scope of previous studies. In terms of quantitative analysis, the 1976 projection model was elaborated to include estimates of the need for nurses by employment setting and degree through 1990. Equally important, the qualitative analysis of the many issues related to the supply and distribution of nurses was extensive. The issues had become far too complex to decide on the future of nursing education in New Jersey based solely upon projections of manpower needs. Concern about a national shortage of nurses had been increasing over the previous two years, despite earlier projections by New Jersey and other states, as well as the federal government, of an anticipated surplus. In addition, questions with respect to the changing education and practice patterns of nurses, health care cost containment policies, and employment trends of women all demanded attention. Following is a review of the scope, findings, and recommendations of the recent report.

The study set out to answer five basic questions:

1. What is the present supply and distribution of registered nurses in New Jersey by employment sector, geographic location, educational preparation and age?

2. Is there an absolute shortage of personnel eligible for licensure and employment as registered nurses, or is there an adequate total supply of nurses but a shortage of persons willing to fill positions in acute care settings, in undesirable duty shifts, and/or in specialty services?
3. If there is a shortage of nursing personnel in specific settings, to what may it be attributed?
4. What is the projected future need for nurses in New Jersey through 1990?
5. Finally, if there is a current and/or projected shortage of nursing personnel, what policy or policies would most effectively address the problem?

To answer these questions, data were analyzed from the following sources:

1. Basic data on supply and distribution were collected from the most recently processed nurse licensure surveys (January 1, 1979). The gross supply figures were then updated to 1980 based on information from the New Jersey Board of Nursing on new licensees in 1979.
2. Information on the number of students and graduates of New Jersey nursing education programs from 1977 to 1979 was collected from the 1979 Survey to Update the Health Professions Education Inventory conducted by the Department of Higher Education, Office for Health Manpower.
3. Current supply and demand information for specific employment sectors was collected from surveys developed by the Office for Health Manpower and distributed to all general and special care hospitals, nursing homes, and home health agencies in New Jersey in December 1979. Information was requested on the number of nurses employed by degree, shift, and service; the number of vacant postions by the same categories; turnover rates; personnel policies; and recruitment practices. In all, 441 surveys were mailed throughout the State. The information on hospital nursing needs was augmented by a series of open-ended interviews conducted in December 1979 and January 1980 with chief executive officers and directors of nursing in nine categorically representative hospitals throughout the State. A second set of interviews at 14 additional categorically representative hospitals was conducted in May and June, 1980, to further identify nursing personnel problems.

In addition, to place the findings of the study within a broader context, all other states were contacted in January 1980, through the organization of State Higher Education Executive Officers for the purposes of clarifying often conflicting information on the supply of nurses, identifying national trends in the education and deployment of nurses, and learning about specific studies and programs

developed by other states. (The state responses are summarized in the Appendix. Included are references to recent reports; projection methodologies, if applicable; major findings; and educational trends over the past decade.)

CURRENT STATUS OF NURSES IN NEW JERSEY - The extensive data collection activities undertaken by the Department of Higher Education offered many new insights into recent trends regarding the supply and distribution of nurses in New Jersey, as well as a number of related educational and employment problems. A total shortage of approximately 2300 full-time equivalent nurses was identified as of January, 1980. This shortage was confined principally to vacancies in acute and long term care facilities, especially during undesirable duty shifts and in specialty services. In fact, the statewide hospital vacancy rate was only 4% for the 7 A.M. to 3 P.M. shift and as high as 20% for the 11 P.M. to 7 A.M. shift. While hospitals by necessity are the largest employers of nurses, the percent of the State's active pool of nurses working in them has been declining slowly in recent years and is currently at approximately 63%. In contrast, the percent of active nurses employed in physicians offices, schools, and industry has been increasing by a small, but significant amount.

In addition, patterns of distribution among the different employment settings were found to vary significantly by the nurse's educational background.(5) The largest number of hospital nurses are graduates of the traditional hospital based diploma schools (56.3%). This percentage has been declining in recent years, however, as the total pool of diploma nurses declines (from 69% of all active nurses in New Jersey in 1975 to 62% in 1979). In contrast, the number of associate degree nurses in hospitals has been increasing; they currently constitute more than 26% of all hospital nurses. This figure is particularly interesting considering that associate degree nurses constitute less than 12% of the total nursing labor force in the State. In fact, approximately 80% of all associate degree nurses are employed in hospitals. The comparable figures for diploma and baccalaureate nurses employed in hospitals are 64.8% and 58.1% respectively.

In no other employment setting do associate degree nurses represent as high a proportion of the labor force as they do in hospitals. Diploma nurses, on the other hand, constitute approximately 75% of all nurses in long term care facilities and 80% in doctor's offices. In addition, baccalaureate nurses constitute approximately 15% of the hospital labor force in comparison to

(5) In New Jersey, as in most other states, there are three separate levels of education which prepare registered nurses for entry into practice: two-year, community college based associate degree programs; three-year hospital based diploma programs; and four-year baccalaureate programs.

25% in clinics,50% in school systems, 48% in home health agencies, and 36% in teaching. Finally, 46.8% of all nursing school faculty members have master's degrees.

It is also interesting to note what the distribution of nurses by place of employment and degree looks like when age is factored in. Almost all nurses begin their careers in hospitals regardless of their educational background. Thus, approximately 90% of active nurses in New Jersey under 30 years of age are employed in hospitals. However, as Illustrations 1-4 indicate, graduates of the various types of educational programs leave hospitals and enter other work settings at very different rates. The number of associate degree graduates in hospitals declines by almost 20% between the ages of 25 and 50, representing an average five year cohort attrition rate of 2.9%. In contrast, the number of diploma graduates in hospitals declines by almost 40% and of baccalaureate graduates by 61% over the same age range, for average attrition rates of 5.3% and 8.0% respectively. Illustrations 2 and 3 indicate that relatively large numbers of diploma graduates seek employment in nursing homes and doctors' offices as they get older. Finally, Illustration 4 indicates that more than 40% of all baccalaureate nurses and one-third of all master's level nurses 50 years of age and older are in school systems.

The nursing personnel problems currently being experienced in New Jersey may be attributed to the interaction of a number of factors. First, with respect to the total supply of all licensed nurses in the State, only 60.9% were actively practicing nursing as of a year ago. The comparable national figure was much closer to 70%. In addition, there has been a decline in the number of persons entering nursing practice in New Jersey in recent years, as a result of a drop in the number of licenses issued by endorsement (i.e., nurses previously licensed in other states) and no increase in the number of licenses issued by examination (i.e., new nurse graduates).

Furthermore, total enrollments in nursing education programs in New Jersey declined by 6% between 1977 and 1979. This is principally due to a significant (26%) decline in diploma school enrollments, a trend which is prevalent nationwide. During the same period, enrollments in associate degree programs declined by 2%. In both cases, enrollments were well below the maximum levels established by the Board of Higher Education in 1977. While enrollments in baccalaureate programs increased by 8%, the total numbers were relatively small. Moreover, baccalaureate graduates are the least likely of all nursing groups to enter and remain in hospital nursing.

ILLUSTRATION 1

PERCENTAGE OF NURSES IN HOSPITALS
BY DEGREE AND AGE

Age	Total, All Nursing Degrees	Diploma	Associate	Baccalaureate	Master's
<25	90.3%	91.7%	87.8%	84.5%	66.7%
25-29	80.7	82.1	84.7	74.9	55.4
30-34	69.6	73.2	80.5	64.0	52.8
35-39	63.2	63.7	78.0	52.7	40.7
40-44	56.3	58.6	72.9	42.6	35.0
45-49	51.9	54.7	70.9	40.9	34.1
50-65	47.0	55.6	70.5	33.0	30.0

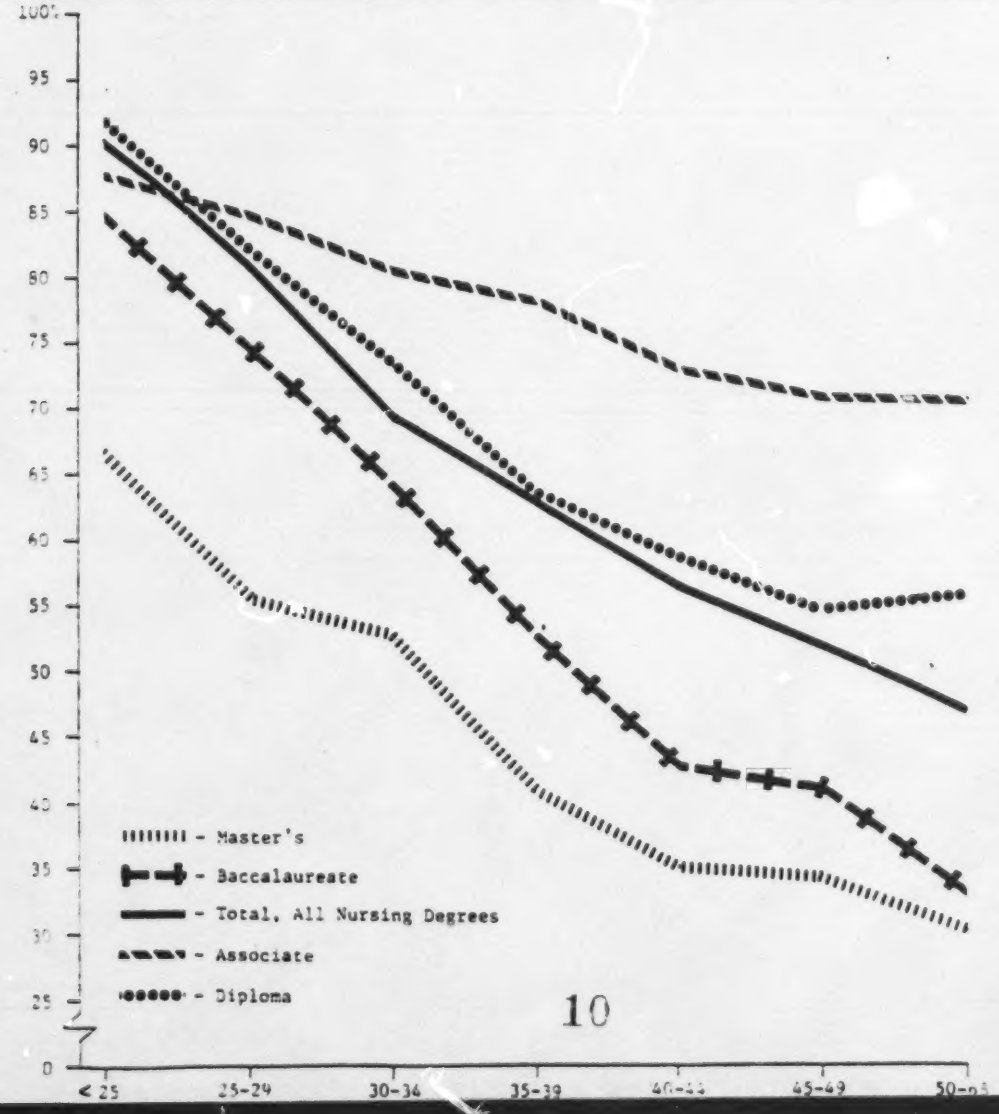


ILLUSTRATION 2

PERCENTAGE OF NURSES IN NURSING HOMES
BY DEGREE AND AGE

Age	Total, All Nursing Degrees	Diploma	Associate	Baccalaureate	Master's
< 25	2.2%	1.8%	5.0%	1.5%	0.0%
25-29	2.9	3.5	4.0	3.4	1.1
30-34	6.3	9.0	3.6	5.5	.9
35-39	7.5	9.8	6.0	5.1	2.5
40-44	11.1	12.9	7.2	6.6	1.6
45-49	11.1	14.0	7.0	5.3	2.4
50-65	11.3	13.2	10.1	5.9	3.4

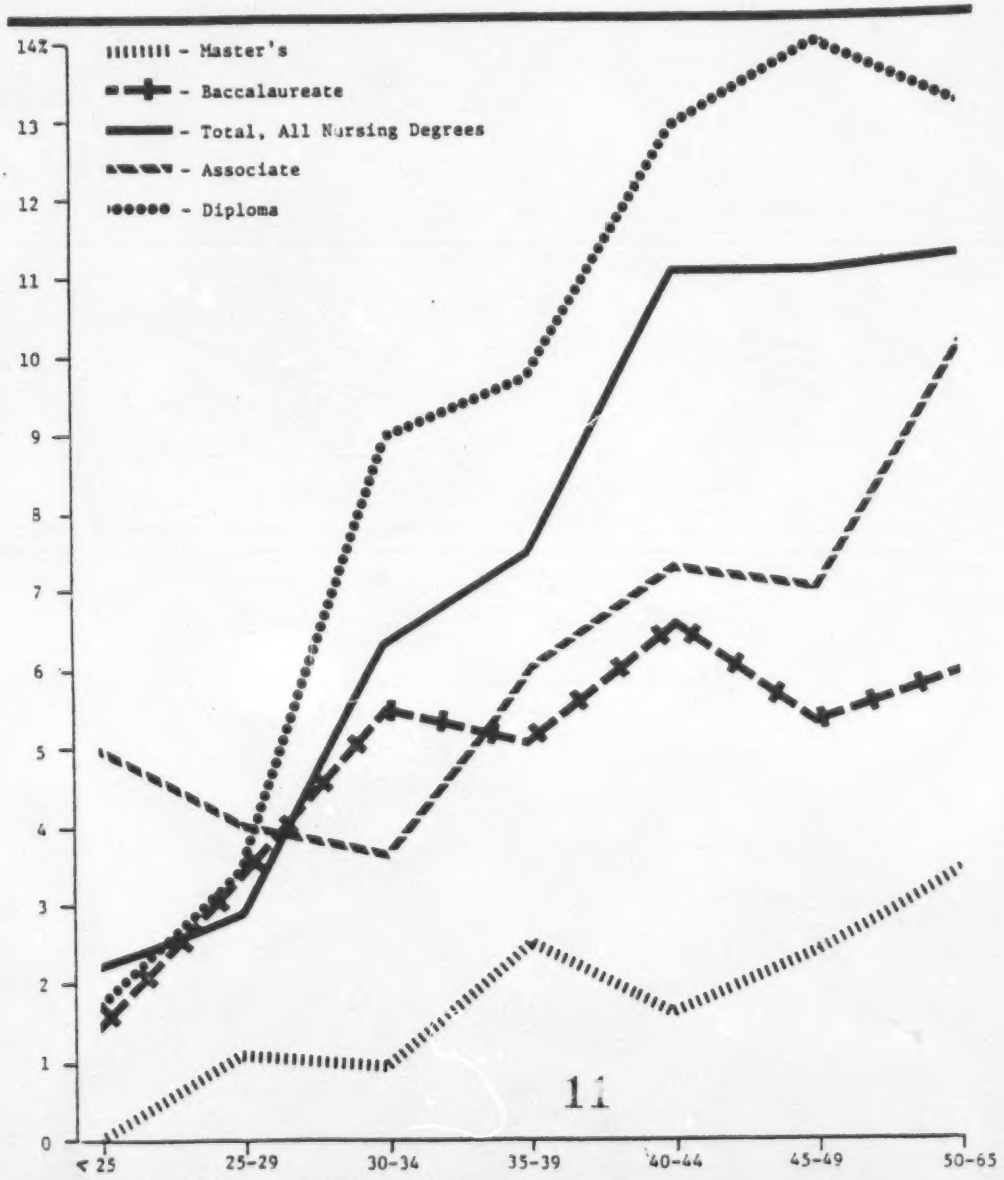


ILLUSTRATION 3

PERCENTAGE OF NURSES IN DOCTOR'S OFFICES
BY DEGREE AND AGE

Age	Total, All Nursing Degrees	Diploma	Associate	Baccalaureate	Master's
< 25	2.3%	2.5%	2.6%	1.4%	6.7%
25-29	5.3	6.3	3.9	2.6	1.6
30-34	7.7	9.0	3.6	5.5	.9
35-39	9.2	11.6	3.9	4.2	.4
40-44	8.2	11.2	4.0	3.6	.4
45-49	7.4	11.2	3.1	3.8	1.0
50-65	8.7	10.6	2.7	2.6	.9

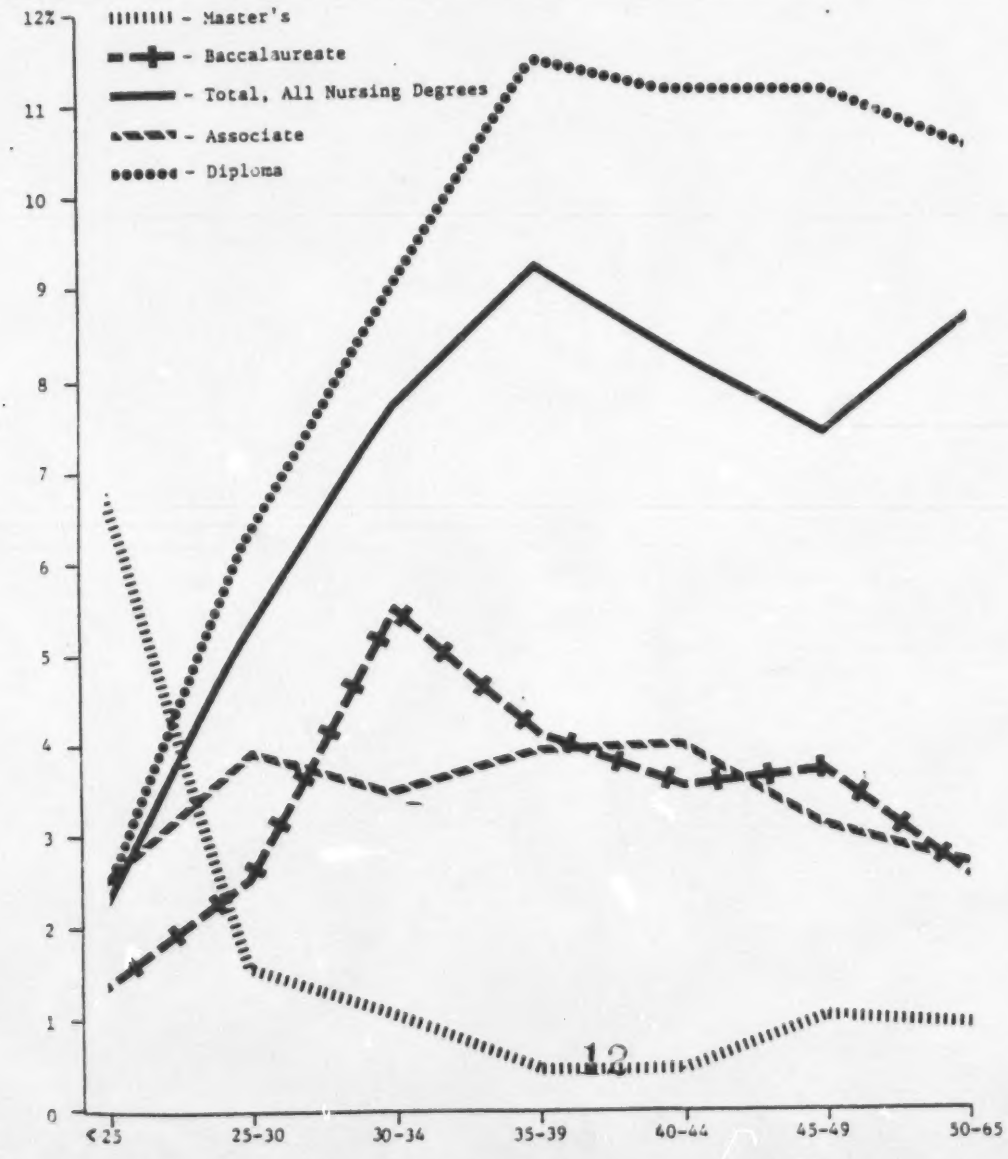
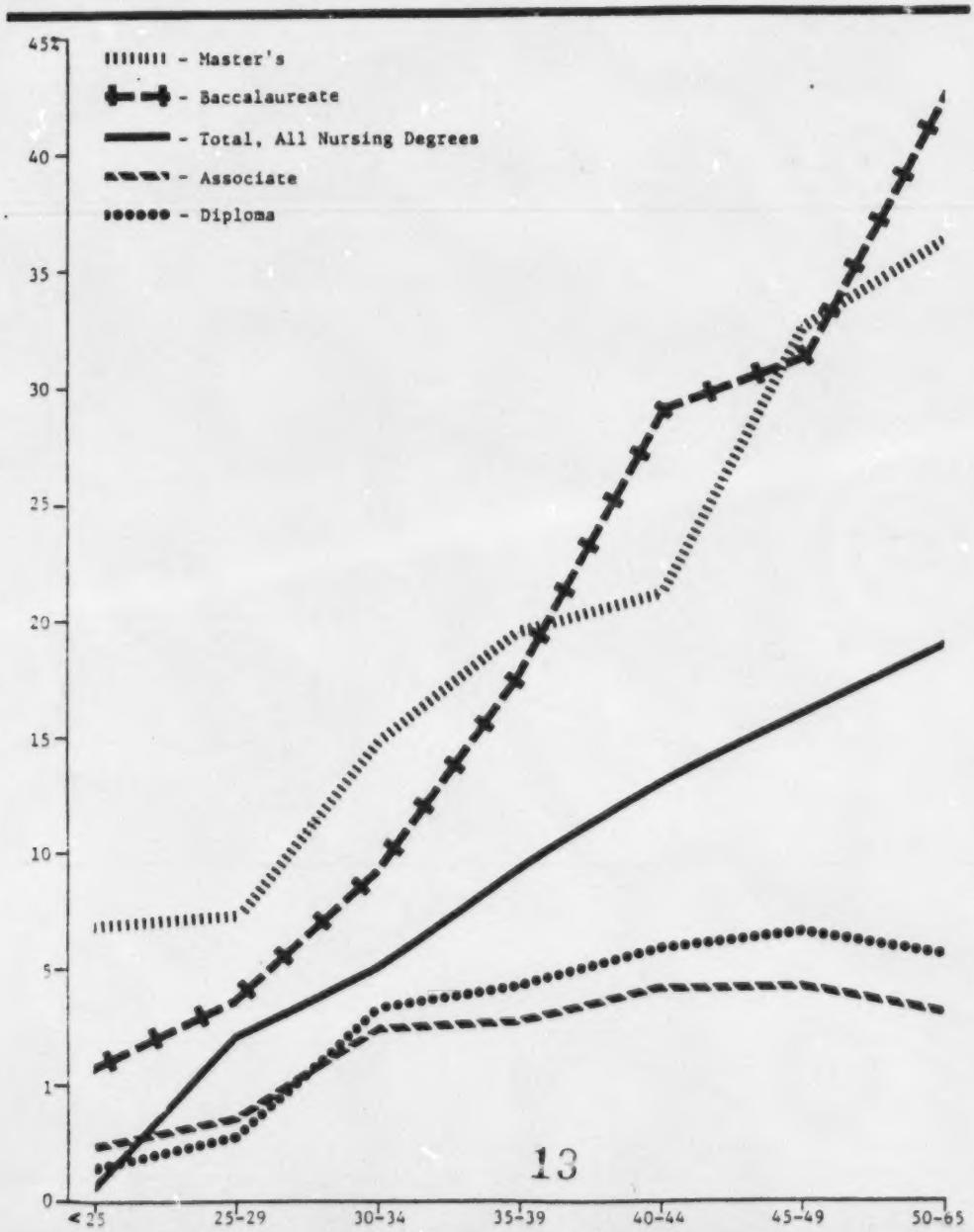


ILLUSTRATION 4

PERCENTAGE OF NURSES IN SCHOOLS
BY DEGREE AND AGE

Age	Total, All Nursing Degrees	Diploma	Associate	Baccalaureate	Master's
< 25	.1%	.3%	.5%	1.8%	6.7%
25-29	1.9	.6	.7	3.3	7.0
30-34	5.0	3.1	2.3	9.0	14.7
35-39	9.1	4.4	2.6	17.4	19.3
40-44	12.6	5.5	4.0	28.5	21.0
45-49	15.8	6.3	4.0	31.1	32.2
50-65	18.5	5.6	3.4	42.2	36.1



Second, with respect to the distribution of personnel, it should be noted that several factors contribute to the decreasing attractiveness of inpatient facilities as employment settings for nurses. These are related principally to 1) working conditions, 2) educational preparation, and 3) economic considerations. Following is a brief review of the problems specific to each factor:

1. Nurses are becoming increasingly reluctant to work the evening and night shifts required in inpatient facilities. Not only are the hours inconvenient, but the degree of responsibility required of nurses is intensified due to the limited availability of other professional personnel. In addition, increasing levels of acuity in hospitals place exceptional demands on a nurse's skills and emotional fortitude. Finally, there is a growing body of literature indicating that nurses are increasingly dissatisfied with the bureaucratic environment of hospitals in which their authority is limited.
2. There is an apparent lack of integration between nursing education and nursing service, which has increased in the last ten to fifteen years. This may be attributed to both a general decrease in the clinical facet of nursing education and a conflict between the values adhered to in educational programs and in the hospital setting. The former is a function of time constraints resulting from an increased emphasis on basic education and the latter to differences between two separate cultures.(6) Thus, while nursing service administrators generally agree that recent nurse graduates are entering service with a broader scientific and theoretical foundation than ever before, they generally lack the functional ability to fit into the realities of a hospital work setting. The problems most frequently cited are that graduates have difficulty both transferring skills learned in a simulated (laboratory) setting, e.g., administering medications, to the hospital setting, and establishing priorities and planning care for a normal day load of four to six patients.
3. Recent data on nursing salaries provide ample cause for professional dissatisfaction. The average hospital wage for nurses in New Jersey is $6.83 per hour; the comparable rate in nursing homes is $6.01. This compares with an average national nursing wage of $6.78 per hour, as reported in the January 1980 issue of RN magazine. Furthermore, it is reported in the same journal that nurses receive from $2.00 to $4.00

(6) See, for example, Kramer, Marlene and Claudia Schmalenberg, "The First Job... A Proving Ground Basis for Empathy Development," Journal of Nursing Administration, Vol. 7, January 1977.

less per hour than such non-health occupations as cashiers and grocery clerks and that some nurses make from $1,000 to $2,000 less than keypunch and computer operators. It is not entirely clear, however, whether these conditions are a function of health care facilities' inability or unwillingness to raise salaries to a level likely to attract and retain nurses.

PROJECTIONS OF FUTURE NEED - The question of whether the current problems regarding the supply and distribution of nurses are likely to continue through the coming decade was addressed through the design and implementation of a manpower projection model. Such models are widely accepted and valuable tools for policy analysis and decision making. While no one projection methodology can account explicitly for all factors that may affect manpower needs, and, in fact, different models may be expected to yield different results depending upon the component assumptions and variables, they can provide a logical and rigorous means for gaining insights into the future. The reliability of any set of projections largely depends upon the statistical soundness of the methodology used and the extent to which the assumptions of the model may be validated.

Supply models differ little, as the basis of virtually all such models is the number and distribution of persons in the current manpower pool. Added to the existing supply for the New Jersey model were the projected number of annual new licensees, based upon an historical time trend, and an anticipated rate of return of inactive nurses to the labor force. The gross projection figures were then adjusted to account for the number of nurses who leave the labor force annually. Two additional supply projections were then developed, one for registered nurses by degree through 1990 and the second for nurses by employment setting for the same period of time.

In contrast to models which project supply, those which project demand need not be subject to the constraints of what is. Consequently, the methodologies and projections vary, based primarily upon whether the model focuses on the health needs of the population (an ideal conceptualization) or upon effective demand (an extrapolation of current patterns of utilization as modified by key socio-economic and demographic changes). Needs based models project the quantity and quality of nurses who ought to be available to meet some specified standard of "good health care". In contrast, models based on effective demand relate the number of employment positions that are likely to be available to the ability of people to afford services.

Although both modeling approaches may be statistically valid, there are disadvantages characteristic of each. Needs based models require enormous amounts of data; rely on factors that may not be easily quantifiable; rely on the judgment of experts whose objectivity may be open to question depending upon how they are selected; and may be unrealistic to the extent that they fail to consider the ability of the population to pay for available services. The projections of requirements calculated to meet these standards tend to overestimate the manpower a region can realistically afford, particularly in view of the growing emphasis on cost containment in the health care system. The models based on effective demand begin with the status quo for the purpose of developing baseline projections and may, therefore, tend to underestimate shifts in consumer choice concerning the mix of health services they elect to purchase. However, alternatives to the basic projections developed by effective demand models are often calculated, assuming various changes in the status quo.

Based upon a careful evaluation of both approaches, the New Jersey Department of Higher Education elected in 1976 to develop a projection model based upon effective demand. The same basic model was used for the latest study. Estimates of projected population, income, and age through 1990, as well as recent trends in hospital utilization rates, served as the independent variables. The demand estimates were then adjusted to reflect the possible introduction of some form of national health insurance.

The basic departmental demand model has been criticized as being principally hospital based. This assessment, however, fails to consider the full effect of each of the independent variables upon the demand for nursing personnel. First, the hospital utilization variable plays a dual role in the model. It is used both to estimate the demand for nursing services in terms of patient days and outpatient visits and as a measure of the community's consciousness of its health needs. Second, the age of the population is correlated not only with the demand for hospital services, but for home health and nursing home services, persumably to an even greater degree. In addition, the demand for <u>all</u> health care services is clearly a function of the size of the total population, regardless of age. Finally, it may be argued that the average income of the population is a more accurate predictor of the demand for nonhospital services than for hospital services. The literature of health economics indicates, in fact, that hospital utilization rates are fairly insensitive to population income due to the widespread use of various forms of health insurance, including

Medicare and Medicaid.[7] On the other hand, health insurance does not cover many outpatient services. Thus, it may be concluded that the higher the income of the population, the greater the demand for nursing services in nonhospital settings. Finally, the introduction of national health insurance may be viewed as a dummy variable to account for other changes in the health care delivery system likely to increase the demand for services.

In addition to projecting the demand for the total number of registered nurses through 1990, the recent study developed projections of the distribution of nurses by educational degree and employment sector. This elaboration of the original model is particularly significant in light of the analysis of the data collected for this study. That is to say, the distribution of nurses by degree and sector may have even greater implications with respect to policy decisions than the total number of active nurses in the State.

To estimate the future need for nurses in New Jersey, the differences between the supply and demand projections were then calculated. Briefly, it was projected that the current shortage of nurses would diminish over the next decade, such that total supply would exceed total demand by 1990. Moreover, the surplus would exist among graduates of all entry level nursing education programs, even though the growth in the supply of baccalaureate nurses will be greater than that of diploma and associate degree nurses. This is reasonable in light of the expected increase in the utilization of ambulatory services, where baccalaureate nurses are in greatest demand.

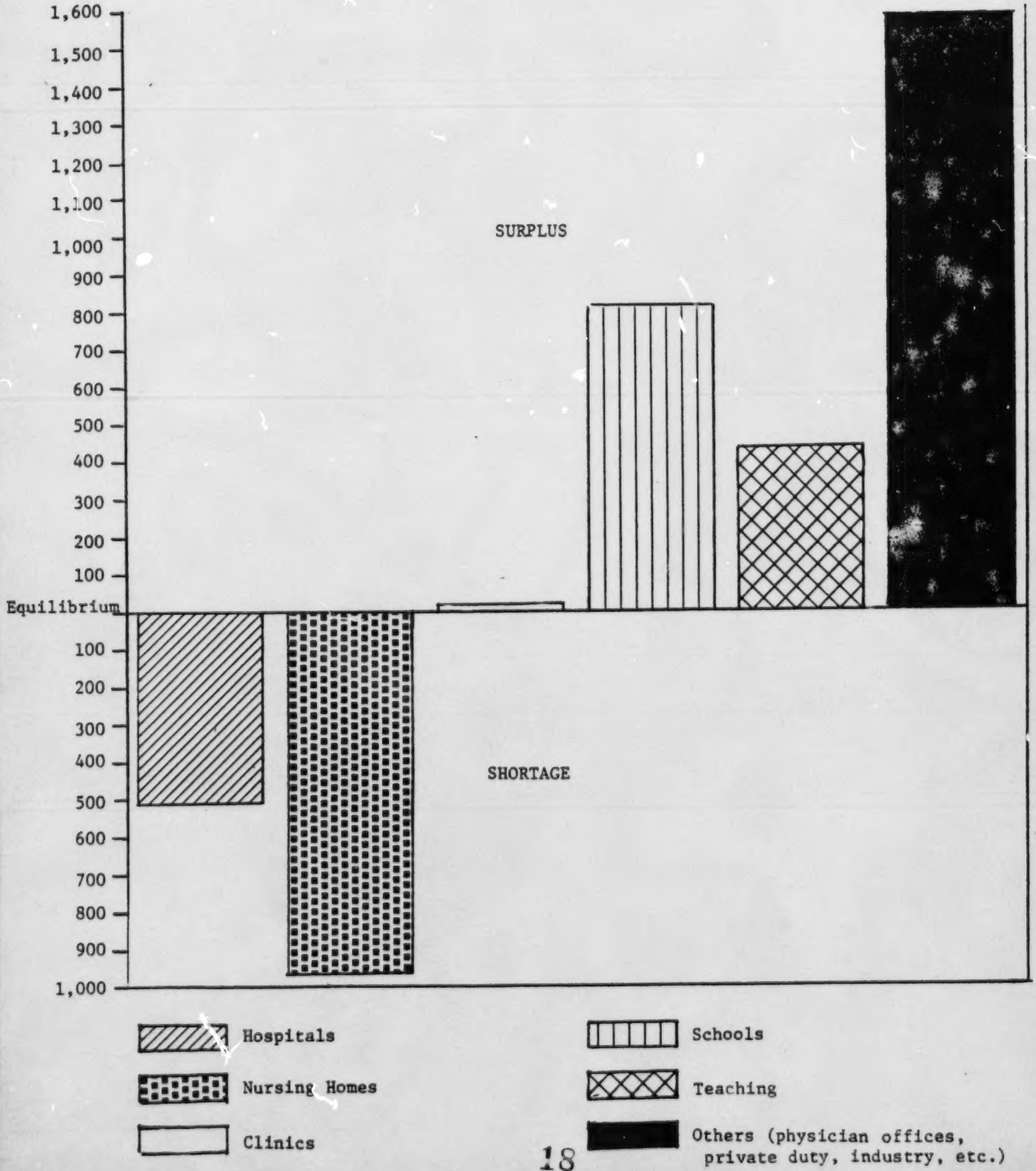
If, however, diploma and associate degree nurses continue to provide the major source of manpower for hospitals and nursing homes, and if baccalaureate nurses continue to seek employment in other settings, acute and long term care facilities will experience lasting shortages. (Figure 1 graphically presents the projected maldistribution.) Because the employment market for nurses is influenced by forces that tend to distort the traditional factors of supply and demand, it is entirely conceivable that the total supply of nurses may well exceed demand while particular sectors experience continuing shortages.

There would appear to be two potential ways to resolve the maldistribution problem. The first is to allow the market to prevail. If at some future date baccalaureate nurses begin to experience difficulty finding jobs in non-acute care settings as a result of projected surpluses, they may have no choice but

(7) See, for example, Paul Feldstein, Health Care Economics, John Wiley and Sons: New York, 1979, p. 91.

FIGURE 1

NEED ESTIMATES OF RNs BY SELECTED
EMPLOYMENT SECTORS IN NEW JERSEY FOR 1990



to work in hospitals. At the same time, if hospitals continue to experience severe shortages, they may be forced to raise salary levels. In either case, the "market" may ultimately produce the desired result. However, this is likely to be a long range solution at best.

The second possibility is to induce baccalaureate nursing programs to address the problem directly. While recognizing the valuable service that baccalaureate nurses have provided (and should continue to provide) in community health care settings, it is also important to acknowledge the need for baccalaureate nurses prepared for the responsibilities of acute care. Thus, it would appear that changes both in the educational preparation of baccalaureate nurses and in their subsequent employment responsibilities and financial compensation by acute care facilities are required to eliminate the projected maldistribution by employment setting. If, in fact, initiatives were to be undertaken by educators and employers which would result in just a 15% increase over the current level of baccalaureate nurses employed in hospitals and nursing homes, the shortages in these facilities could be eliminated.

RECOMMENDATIONS - The recommendations developed by the Department of Higher Education as a result of the findings of the recent study were far more comprehensive than those of any previous report on the need for nurses in New Jersey. Such traditional departmental concerns as enrollments,[8] review of new programs, and data collection activities were addressed. However, the principal focus of the recommendations was on the need for cooperative efforts among a wide range of New Jersey organizations and agencies interested in nursing issues to explore possible solutions to the educational and employment problems identified in the report. These included the initiation of a dialogue between the deans and directors of baccalaureate nursing programs and the administrators of acute and long term care facilities, for the specific purpose of developing professional practice roles which would encourage the employment and retention of baccalaureate graduates; the consideration by employer representative groups and the New Jersey Department of Health of the adequacy of financial mechanisms to attract and retain nursing personnel; and a review by nursing organizations and educational institutions of the potential of refresher courses for inactive nurses to encourage and ease their return to practice. Finally, the report

(8) The maximum limits on enrollments set by the Board of Higher Education in 1977 were lifted due to the significant, unanticipated decline in nursing school enrollments, which was consistent with national trends and presumably unrelated to the previous Board policy.

recommended another update of the analysis of the need for nurses in New Jersey three years hence. This study would examine the effects of additional changes in the health care system on the supply and distribution of nurses and, presumably, further refine departmental analytic techniques.

These recommendations were adopted by the Board of Higher Education as departmental policy in July, 1980. It is interesting to note that in implementing the recommendations, the six goals which the Carnegie Commission identified as common to statewide higher education coordinating agencies are being fulfilled. (See page 1 above.)

To facilitate the implementation of the recommendations, members of the Department of Higher Education have been meeting recently with representatives of appropriate bodies across the State to further clarify the issues, as well as to discuss specific tactics. In addition, the Department has prepared a proposal to seek funding for a statewide project to strengthen the clinical skills of nurses graduating from associate degree programs (i.e., the programs with the highest percentage of graduates working in hospitals). The proposed project, under the general supervision of the Department of Higher Education, is expected to involve most of the associate degree programs in the State in activities designed to modify their programs in order to provide students with greater opportunities to develop clinical competencies.

Discussion

Manpower needs assessments are valuable tools for the conduct of higher education program review. They enable state level policy decisions on the numbers and types of personnel postsecondary institutions should be educating to be related to estimates of current and projected needs in specific occupational categories. While quantitative estimates of supply and demand constitute an important dimension of the program planning process, the value of such projections is greatly enhanced by incorporating analysis of qualitative issues which may be relevant to determinations of need in specific occupational categories. In nursing, for example, these may include recent educational trends, practice patterns, and cost considerations. A comprehensive manpower study is one in which findings and recommendations are based upon rigorous analyses of both a quantitative and qualitative nature.

It should be recognized that a comprehensive manpower study is not always feasible. The scope of a needs assessment may be limited by the availability of data, agency resources to conduct the study, and finances, particularly the first time a given field is analyzed. Therefore, regular updates should be planned and consist of more than simply revising previous numbers. Each new iteration should include a critical

examination of previous methodologies and a thoughtful analysis of additional sources of potentially valuable information, as well as consideration of possible changes in the structure of the occupation and/or in the general economic and social environment. To the extent that state higher education agencies are able to incorporate both quantitative and qualitative manpower analyses into their program review process, the interests of both long range planning and the rational allocation of scarce resources will be best served.

APPENDIX

SUMMARY FINDINGS - STATE RESPONSES

SUMMARY FINDINGS - STATE RESPONSES

State	Report	Date	Projection Methods	Major Findings	Educational Trends*	Informal Observations
Alabama	Pending	Due June 1980	Using needs based model for state level planning developed by WICHE.	Not yet available for present study. A 1976 study projecting on the basis of effective demand found that there would be a future surplus of RNs.	From 1970 to 1977 the number of ADN and BSN programs increased by 200% and the number of diploma schools decreased by 100% (from 10 to 5).	N/P
Alaska	No study completed or contemplated.	N/A	N/A	N/A	As of 1977, there was one BSN program and one ADN program.	N/P
Arizona	Pending	In process of awarding contract	N/A	N/A	All public universities offer BSN programs. Most community colleges offer ADN programs. The one diploma program was closed in 1972.	Hospitals are experiencing continuing shortages. 50% of the nurses licensed and living in Arizona are inactive.
Arkansas	Pending	N/A	N/A	N/A	Since the mid-'60s, a total of 18 ADN & BSN programs were established. Only a few nursing programs existed before then, and they were all hospital based. All but one of these had been phased out as of 1977. State legislation requires the transfer of nursing credits between institutions to allow for ease in articulation.	Nursing shortages have been a "long and lingering problem" despite a dramatic increase in the number of graduate nurses.
California	California Postsecondary Education Commission, *A Health Science Education Plan for California 1978-1980* (Follow-up study of nursing manpower needs is proposed.)	July 1979	No projections are included in report.	Nursing education programs have an adequate capacity to meet the needs of the State for new nursing graduates if the continued in-migration of nurses continues at current levels. 67% of newly licensed nurses are from out-of-state. Associate degree nurses are the most likely to stay in California & in region in which they were trained.	In the past decade, the combined output of BSN & ADN programs has increased 149%. Only diploma programs have declined in number (from 16 to 4) and output. There are strong and comprehensive statutory requirements for the educational articulation of nurses at all levels. Since 1972, 8 upper division programs for RNs have been established.	California is experiencing the problem of apparent shortages in nurses willing to work in hospitals despite an adequate annual output of nurses from training programs.

*Information supplemented by National League for Nursing, NLN Nursing Data Book: Statistical Information on Nursing Education and Newly Licensed Nurses, 1978, Tables 4, 5, and 6, pp. 5-7.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Colorado	Colorado Commission on Higher Education, *A Review of Nursing Education Programs in Colorado*	April 1979	Two different methodologies are examined: the WICHE state model, which projects requirements on the basis of need, & the Colorado Hospital Association, which projects on the basis of effective demand using current labor force participation rates. No supply projections are provided.	Comparing each set of projections for 1982 against actual numbers employed in 1977 reveals an additional manpower requirement of 39% using the WICHE methodology and an additional manpower requirement of 22% using the CHA methodology. However, the Commission on Higher Education found that as of 1979 the overall supply of RNs presently appears adequate to meet the total demand due in part to a large annual in-migration of nurses. But attention should be given to the preparation of additional nurses in 3 geographic regions in the State.	The number of ADN & generic BSN programs have remained stable over the past decade at 6 and 3 respectively. The number of diploma programs has declined from 5 to 2. Recent emphasis has been placed on the development of upper division programs, with 4 now in operation and 1 recommended. The development or expansion of 2 ADN and 2 upper division programs in targeted geographic areas is recommended. No new generic programs are recommended due to the cost ineffectiveness of these programs and the lack of evidence that the graduates of these programs provide better nursing care.	There are too few trained nurses for hospital settings. The major alleviating factor is the in-migration of nurses from other states. The State is emphasizing two-plus-two programs to further alleviate the problem. 77% of the State's licensed nurses are actively employed in nursing.
Connecticut	No study completed or contemplated	N/A	N/A	N/A	In the past decade the number of ADN & BSN programs approximately doubled. There are presently 7 programs at each level. During the same period, the number of diploma schools dropped from 16 to 2. Interest is mounting to improve access to special baccalaureate programs for diploma graduates.	Acute care facilities are experiencing serious shortages, but training more nurses would not necessarily remedy this problem.
Delaware	No study completed or contemplated	N/A	N/A	N/A	In the past decade the number of ADN & BSN programs has approximately doubled, while the number of diploma schools has declined by half. There are 3, 2, and 2 programs respectively, and the production of degreed nurses is judged to be right on target for the foreseeable future.	There seems to be little problem re: the supply of nurses where the population & facilities are centered. Shortages exist in State psychiatric facilities, due to poor working conditions, and in one rural hospital, due to location.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
District of Columbia	No study completed or contemplated	N/A	N/A	N/A	The number of ADN & BSN programs has remained stable over past 10 years, at 1 and 5 respectively. The number of diploma schools has declined.	N/P
Florida	Nursing Education Study/ Advisory Group of the Commissioner of Education, *Progress Report*	January 1980	No projections are included in report.	Addresses educational issues including articulation. Makes implicit assumption of shortages of nurses in State but no specification as to nature of shortages. An attached survey of hospitals attempts to identify demand for new educational programs. General agreement of need, particularly at BSN level.	The number of ADN programs has increased slightly to 23 in past 10 years. The number of BSN programs has grown from 8 to 13 since 1977. It is unclear whether any of these are upper division programs. There is only one diploma school remaining in the State. There is a clear commitment to articulation, with recognition of competencies from previous education and experience to facilitate upward mobility.	N/P
Georgia	Pending	To begin in March 1980	N/A	N/A	In the past decade, the number of ADN & BSN programs has increased by 50%, and the number of diploma programs has decreased by 25%.	State is experiencing the "paradox" of an adequate number of graduates and licentiates yet shortages in acute care settings. This chronic problem seems to have an exacerbation at approximately five year intervals.
Hawaii	University of Hawaii, *Report of the Advisory Committee on Nursing Education*	Sept. 1979	Surveyed state's nursing leaders to assess current and future nursing employment needs.	A sufficient pool of RNs exists to meet the expected nursing market demand for the state provided that total enrollment remains constant, with an increasing number of baccalaureate degrees and sufficient educational opportunities are provided for currently licensed nurses to change their educational qualifications.	There are 4 ADN, 1 BSN and no diploma programs in the State. There have been no changes in the latter two categories during the past 10 years. The ADN programs have doubled during that period.	There is a current shortage of nurses in acute care settings. More than half the licensed RNs in the State are not in the labor force.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Idaho	State Board of Education, *A Report on the Nursing Education Curriculum Review*	Spring 1977	No projections are included in report.	There is an urgent need to increase the number of RNs at all levels.	There were 5 ADN, 1 BSN and no diploma programs in Idaho in 1977. This represents only minimal change from 1970. To address the need for nurses in the state, 1977 study recommended an increase in enrollments in existing schools and improved access to BSN programs for RNs.	N/P
Illinois	Illinois Board of Higher Education, Draft Report: *An Assessment of Progress Since 1968 in Education for the Health Professions*	Sept. 1979	No specific methodology developed. Examines and compares a range of projections developed by a number of sources, including the needs based WICHE model and demand based Vector Research Inc. model.	Reexamination of 1976 Master Plan policy that no new programs for RNs should be established unless "a compelling need" can be demonstrated and that master's programs for nurses should be expanded. The present update found that the overall supply of RNs appears to be adequate to meet nursing requirements until 1985. Reported shortages may be the result of living and working conditions beyond the control of educational programs. However, a faculty shortage of master's level nurses exists and Illinois is lagging behind the nation in the preparation of BSNs.	In the past decade the number of ADN programs grew from 24 to 37 and of BSN programs from 10 to 21. The number of diploma programs declined from 44 to 30. The Board of Higher Education is recommending the support of increased enrollments in baccalaureate programs but the establishment of no new programs unless there is adequate supply of faculty and a compelling need. Funding for diploma programs should be expected to decrease.	N/P
Indiana	Pending	May 1980	Using models developed by WICHE and other organizations under contract with DHEW.	Preliminary findings indicate that demand for nurses continues to outpace spectacular growth in supply.	Number of programs has remained relatively stable over past 10 years with slight increase in ADN & BSN programs (2 each) and a small decline in the number of diploma programs.	Indiana is experiencing a shortage of nurses in its hospitals. Complexities of the problem are compounded by internal strife in the nursing profession. Further adding to complexity are facts that nursing has not followed traditional marketplace patterns, that there is no increase in student demand to enter nursing programs, and that salaries are low.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Iowa	University of Iowa, Summary: *Report on Nursing Education Programs in Iowa*	Feb. 1979	No projections are included in report.	This is a follow-up to 1975 report which recommended that until under-utilization of BSNs in state is corrected, no new programs at this level be approved. To assure adequate supply of RNs, 1 new ADN and/or diploma program should be approved as needed. Follow-up recommended increasing access to BSN programs for ADN and diploma nurses.	In past decade, the number of ADN programs doubled to 16, the number of BSN programs increased from 4 to 11, and the number of diploma programs declined by half to 9. Virtually no articulation presently exists for ADN and diploma graduates into BSN programs. There are no upper division programs.	N/P
Kansas	Council of Chief Academic Officers, *Report and Recommendation on the 1202 Commission Recommendation on Nursing*	Sept. 1977	Supply and demand projections are on the basis of extending past trends on the employment of RNs in the state.	Existing educational programs can, at 1977 enrollment levels, produce an adequate supply of nurses through 1980. Enrollments for entering nursing programs were frozen for one year pending more precise demand projections.	From 1970 to 1977, the number of ADN & BSN programs increased by approximately 100% and the number of diploma programs declined by the same percentage. The expansion of master's program is recommended. No reference is made to the development of upper division programs.	Following further analysis of nursing supply in 1978, the moratorium on BSN enrollments was lifted but no new programs have been initiated.
Kentucky	Council on Higher Education, *Nursing Comprehensive Planning for Higher Education: A Phase I Report*	Sept. 1975	No projections were provided in the '75 report. However, a recommendation was made that a manpower data system be created. In response to the report a 3 year nursing study project was begun in 1977 which is utilizing the need based WICHE projection methodology.	Preliminary estimates of the current project suggest that sufficient numbers of ADNs are being produced but the number of BSNs & MSNs should be increased.	In the past decade the number of ADN & BSN programs has approximately doubled. Of the 10 current baccalaureate programs, 5 are upper division programs. There is currently 1 hospital diploma program in comparison to a total of 6 such programs in 1970.	There is a continuing maldistribution of nurses with rural areas in particular experiencing a shortage of nurses.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Louisiana	Louisiana Board of Regents, *Health Manpower Plan*	Sept. 1978	Supply & demand projections are on the basis of extending past trends on the number of graduates & employment of nurses in the state. More than 80% of the licensed nurses in the state are employed in nursing.	A 7% shortage of nurses was projected for 1980, growing to 14% by 1985, with New Orleans experiencing the most severe problems.	In the past decade the number of ADN programs has increased from 2 to 6, the number of BSN programs has remained stable at 7, and the number of diploma programs has declined from 6 to 3. The Manpower Plan recommends that (1) by some future unspecified date the BSN be recognized as the minimum degree for professional practice; (2) the BSN programs develop curricula to ensure the clinical competency of graduates and (3) the BSN programs facilitate ease of articulation for RNs. Louisiana is unusual in that the majority of nursing students are enrolled in baccalaureate programs (approximately 66%).	There has been a continuing nursing shortage which despite rapid expansions in enrollment over the past decade "continues to beg a solution".
Maryland	Maryland Nurses' Association, *Report of the Maryland Commission for Nursing*	1977	No supply and demand projections are included in the report.	Issues of nurse preparation and utilization are addressed. Recommends increasing the capacity & accessibility of baccalaureate programs and increasing the number of master's programs.	The number of BSN programs has doubled in the past decade, the number of ADN programs has increased by 30% and the number of diploma programs has declined by more than 50%. All existing baccalaureate programs are being modified to accommodate RNs. In addition, an upper division program was recently established which is offered on evenings and weekends only.	N/P
Massachusetts	No study recently completed or contemplated	N/A	N/A	N/A	The number of ADN & BSN programs has increased slightly over the past decade. The number of diploma schools has declined from 41 to 26. Recently approved new programs are specialized, e.g. a MSN program for those holding a non-nursing baccalaureate degree.	Massachusetts has the second highest ratio of nurses to population in the nation. No new undergraduate programs are presently envisaged although enrollment cutbacks have not been discussed.
Michigan	Pending	Spring 1980	N/A	N/A	The number of ADN & BSN programs has increased by 50% in the past decade; the number of diploma programs has declined by the same percentage.	N/P

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Minnesota	Pending	Fall 1980	N/A	N/A	The number of BSN programs has remained stable, ADN programs have doubled, and diploma programs have declined from 15 to 5.	Current shortage of nurses in acute care settings. Present study is attempting to address question of how many nurses at what level should be produced annually in Minnesota.
Mississippi	Mississippi Council of Deans and Directors, Schools of Nursing, *An Assessment of Nursing Needs and Resources in Mississippi*	March 1978	Uses WICHE state model to determine requirements for 1981; projects on the basis of need.	Shortage existed at time of the study, which was projected to continue through 1981, ranging from 23 to 31%. The 1978 study recommends an increase in the total number of nurses, as well as a shift in emphasis to baccalaureate nurses.	All but 2 of the hospital diploma schools have been phased out in the past decade. In their place, 9 community colleges and 3 universities have developed ADN programs. Five new baccalaureate programs have also emerged. The 1978 study recommends increased emphasis on providing opportunities for upward mobility for nurses. Two upper division off-campus programs were recently approved.	Mississippi has never been close to filling its nurse manpower needs. In January 1980, hospitals indicated 1,000 funded unfilled positions. The number of graduates has increased each year, but "there are multiple reasons for the continued shortage."
Missouri	Missouri Department of Higher Education and Missouri Nurses Association, *Recommendations from the State Advisory Committee on Nursing and Nursing Education*	Sept. 1979	No projections are included in report.	A 1977 nursing manpower study in the state found that the annual numbers of new licentiates would meet current and future needs. However, the 1979 committee placed credence in 1978 WICHE projections of need for additional baccalaureate nurses. The recommendations call for no new ADN programs, new BSN programs only if in cooperation with an existing ADN or diploma program, & the strengthening and expansion of graduate level programs.	Since 1970 the number of bacclaureate programs has remained stable, the number of ADN programs has increased by 50% and the number of diploma programs has declined by approximately 25%. A principal thrust of the 1979 recommendations is toward a statewide system of articulation encompassing all levels of nursing and recommending close affiliation between existing ADN and diploma programs with BSN programs.	The state is experiencing nurse shortages which are becoming progressively more severe. However, present recommendations are not geared to increasing the total supply of nurses by developing new educational programs. No clear indication that increasing educational output will relieve the shortage, but several new nursing program proposals are "in the wings".

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Montana	No study completed or contemplated.	N/A	N/A	N/A	In the past 10 years the number of ADN programs has been stable at 2, baccalaureate programs have increased from 1 to 2, and diploma programs have declined from 2 to 1. Enrollment has decreased at the one state supported baccalaureate program.	A recent mail survey by one nursing service administrator showed nursing vacancies in over half of the small hospitals responding. An effort to close a campus extension nursing program was reversed by the community due to concerns regarding hospital recruitment.
Nebraska	No study completed or contemplated.	N/A	N/A	N/A	Since 1970 the number of ADN programs has been stable at 2, diploma programs have decreased by 33% and baccalaureate programs have grown from 3 to 4.	Because of the limited number of programs, the state has not had a need to study the nursing issue.
Nevada	No study completed or contemplated.	N/A	N/A	N/A	There are no diploma programs in the state, 1 BSN program, and 2 ADN programs. Only the number of ADN programs has changed since 1970, from 1 to 2.	N/P
New Hampshire	No study completed or contemplated.	N/A	N/A	N/A	There are 8 nursing programs in the state: 2 at the baccalaureate level, 1 ADN program and 5 diploma programs. In 1970 there were 10 programs, but 2 diploma programs have closed.	N/P
New Mexico	Report to the New Mexico Department of Health & Environment, *Nursing Demand and Supply in New Mexico, 1977-1982.*	June 1978	Follows WICHE state model to project requirements. Projects on the basis of need for the state as a whole & for 7 planning districts.	Statewide, a 22% shortage was projected by 1982. By district the shortage ranges from 13% to 77%. The shortage will be distributed over all educational preparations. The greatest shortage will be for BSNs (50%) and ADNs (40%).	There have been no diploma programs in New Mexico for at least a decade. Both ADN and BSN programs have grown since 1970. A System for Nursing Articulation Program has been established in the state to foster educational mobility.	N/P

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
New York	Office of the Executive Secretary to the State Board for Nursing and Office of Postsecondary Research, *A Model for Projecting Nursing*	March 1978	Pilot tests WICHE state model.	Does not specify shortage or surplus. Describes model and its capabilities, advantages, and disadvantages.	Since 1970 the number of ADN programs has increased by approximately 30%, the number of BSN programs by 10% and the number of diploma programs declined by 50%. The number of graduates prepared for the state examination peaked in 1976-77 and has been declining since. Further, the enrollment in master's level programs appears to be declining despite an increasing demand for nurses at this level.	Beginning to receive complaints about the nurse supply in the state related to both the numbers of available personnel and the services they are prepared to perform. A 1978 survey of licensed health care facilities in the state indicated a large number of budgeted, unfilled RN positions & a special need for nurses in specialty clinical areas.
North Carolina	Last study in 1975; presently being updated	Summer 1980	Conducting interviews in health facilities across state; also examining WICHE and other studies.	1975 study found that programs in place should meet effective demand for RNs in 1980; moratorium was placed on new baccalaureate programs until 1980. Conclusions and recommendations re: present study are not yet available.	In the past decade, the number of BSN programs has remained stable, the number of ADN programs more than doubled, and the number of diploma programs declined by more than 50%.	N/P
North Dakota	No study since the early 1970s; another study will be conducted in 2 years	1982	N/A	As result of earlier study, 2 new nursing programs were established which have helped the state respond to nursing needs.	North Dakota has had 2 ADN programs and 4 BSN programs since the early 1970s. The number of diploma programs has dropped from 6 to 3. There is room in each of the programs for additional students. In process of introducing master's level program.	State's greatest need is for adequate teaching staff and specialists prepared at the master's level.
Ohio	Pending by the Council on Nursing Needs and Resources .	Late 1980	N/P	N/P	The number of ADN & BSN programs has increased by more than 40% since 1970. While the number of diploma schools has declined by almost 30%, it still remained relatively high at 31 programs in 1977	When the number of new licentiates is added to the existing RN pool, the potential work force exceeds the supply of available positions in the state. Nonetheless there is an apparent unmet need for qualified personnel throughout Ohio.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Pennsylvania	Most recent study completed in 1975; beginning to reassess needs	N/A	N/A	As a result of 1975 study moratorium was placed on new nursing programs. This was lifted in 1978, but no new undergraduate programs have been developed.	Since 1970, 9 new ADN and 7 new baccalaureate programs were developed. Although the number of diploma programs declined by approximately 35%, there were still 58 programs in the State in 1977, exceeding any other state by more than 20 such programs. Increasing need for access by ADN and diploma nurses into BSN programs is being reviewed. In addition, state is working to expand the number of MSN programs.	Severe shortage of nurses trained at the graduate level to teach in baccalaureate nursing programs. Statistics suggest a more general nursing shortage in the state, but it has yet to be proved whether this is a true shortage or a maldistribution.
South Carolina	*Report of the Task Force on Nursing Education to the S.C. Commission of Higher Education;* State plan for nursing education is pending	May 1979 Due Fall 1980	No projections are included in report; a subcommittee was appointed to study the WICHE state model but has addressed itself largely to staffing patterns and requirements.	Addresses issues related principally to long range planning and educational programs. Chapter on Health and Medical Education in 1980 Higher Education Master Plan refers to severe shortages of individuals qualified to deliver nursing care. Strategies designed to improve supply through the education of additional nurses are viewed as unlikely to be successful at solving maldistribution problems.	From 1970 to 1977, the number of BSN programs remained stable at 3, the number of ADN programs doubled from 5 to 10, and the number of diploma programs declined from 2 to 1. Task Force recommendations focus on the need for opportunities for upward mobility for nurses and the development of clinical competencies.	The legislature placed a moratorium on the consideration of new programs in 1978 except to meet pressing local needs. Removal of the moratorium is anticipated shortly. The shortage of nurses seems to be so acute that, following the removal of the moratorium, new program proposals will be reviewed even if the State Master Plan for Nursing is incomplete.
Tennessee	Tennessee Higher Education Commission, *Nursing Education in Tennessee*; a new study will probably be undertaken in next year pending staff recommendation to Commission	August 1977	Compares 1977 population ratios to past ratios and establishes goals.	Principal problem was found to be one of distribution, with rural areas experiencing severe shortages.	From 1970 to 1977 the number of BSN programs grew from 4 to 6. Three additional generic programs were approved in 1979. In addition, ADN programs grew from 11 to 15, and only 1 of 8 diploma programs closed during the same period.	In spite of significant growth in educational programs and enrollments, complaints from hospitals about nursing shortages are numerous. The establishment of additional education programs cannot solve the problems related to working conditions, family obligations, etc.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Texas	Coordinating Board, Texas College and University System, *Toward Quality Health Care*, CB Study Paper 24; a current study of the nursing issue is being conducted by the University of Texas at Austin	January 1975 Due May 1980	Projects on the basis of 1975 utilization and according to optimum staffing patterns established by the state's Nursing Project.	Projected large surplus under 1975 staffing patterns and a shortage under optimum staffing patterns. Information provided statewide and for 21 planning regions. Since the 1975 report, individual studies have addressed the need for new nursing programs in several geographic areas, specifically Central Texas and Houston. There is a shortage of nurses in the Houston area to staff hospitals. In Central Texas it was determined that it is within the capacity of existing RN programs to provide graduates to meet current and projected needs. In addition, there is an increasing concentration of RNs in urban areas, while rural areas are underserved.	In the past decade the number of ADN programs has grown from 20 to 31, the number of diploma programs has declined from 14 to 6 and the number of generic baccalaureate programs has increased from 10 to 17. In addition, since 1974, 5 upper division programs have been approved, 4 of which are operational, and 2 additional programs are being considered. A growing problem has been a decrease in numbers of qualified applicants to nursing education programs and a decline in enrollments (17% in the last 2 years).	In the last 3 to 4 years Texas has been experiencing a moderate to severe nursing shortage in most areas of the state especially in acute care settings. However, despite the need for additional nurses, there is concern that the establishment of new programs would exacerbate the problem of declining enrollments. In addition, although there is clear support in the state for upper division programs, past experience has shown that ADN & diploma nurses who obtain the BSN often move out of the staff nursing level, further exacerbating hospital nursing personnel problems.
Vermont	No study completed or contemplated	N/A	N/A	N/A	The number of ADN & BSN programs has remained stable since 1970 at 3 and 1 respectively. The 2 diploma programs in existence in 1970 have since been closed. The state is currently experiencing a slight increase in enrollments in ADN programs. Expansion of the one small BSN program in the state is being discouraged.	The need for nurses in the state has generally stabilized. The relationship between the number of graduates and available jobs seems "good" at this time. Most of the known need appears to be in special areas such as acute care.

State	Report	Date	Projection Methods	Major Findings	Educational Trends	Informal Observations
Virginia	State Council on Higher Education for Virginia, *Health Manpower Study: Registered Nurses*	Dec. 1976	Projects on the basis of effective demand, extending 1975 state staffing patterns, enrollments, licensing trends, and work force participation rates.	Projected 50% surplus of RNs statewide.	Since 1970 the number of ADN & BSN programs has increased by 50% and the number of diploma programs has declined by 25%. Of the 3 new baccalaureate programs approved since 1977, 2 are upper division only and the third is limited in size, with 50% of enrollees expected to be RNs.	No new baccalaureate programs will be approved and existing programs will be encouraged to provide education for ADN and diploma graduates.
West Virginia	West Virginia Governor's Commission on Nursing, *West Virginia Nursing Needs Assessment Project*	Sept. 1979	Follows WICHE state model to project requirements; projects on the basis of need for the state and separately for 11 planning regions.	Based on the lower bound criteria, a 9% surplus of nurses is projected for 1984, although there will be a significant need for nurses trained at the baccalaureate level. Based on the upper bound criteria, there will be a 26% shortage of nurses statewide in 1984.	The total number of nursing programs has remained stable since 1970, with a small increase in the number of BSN & ADN programs and a decline in the number of diploma programs from 5 to 2. Present programs are <u>not</u> wanting for students.	West Virginia is suffering from a serious nursing shortage which has necessitated the closing of some hospital beds. There is general agreement that increasing the number or size of the education programs may not solve the problem.
Wisconsin	Wisconsin Study Committee, *The Wisconsin Statewide Study of Nursing and Nursing Education Final Report*	October 1979	Used the WICHE methodology to project requirements; projects on the basis of need, particularly for nurse employment settings.	Determined that there was a need for an additional 9000+ FTE direct care nurses. This represents a 40% increase over the current number of FTE licensed nurses in state health care institutions/ agencies. 65% of the total is identified as needed in nursing homes.	Since 1970 the number of BSN programs has remained stable at 8, the number of ADN programs has increased from 2 to 10, and the number of diploma programs has declined from 14 to 8. There is little relationship or articulation between or among any of the programs. The Nursing Study Committee recommends that BSN completion programs recognize prior learning, that graduate nurses be prepared to meet specific competencies, that new ADN and generic BSN programs be developed and that sufficient numbers of additional nurses be trained at the graduate levels to serve teaching and leadership roles.	Some of the Nursing Study recommendations are already starting to be implemented. Further implementation is assumed as the recommendations are more thoroughly reviewed and understood.